On Motivations for Southeast Asian Doctoral Students' Studying at Japanese Private Universities

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Abstract

It was investigated why Southeast Asian recipients of engineering or related fields studied at Japanese private universities. Scholarships were the most popular reason. The reasons that they liked Japan and that the research or education level at Japanese universities was high were less popular. About a half of questionnaire respondents had been to Japan before they studied at Japanese language institutes or at Japanese universities. More than ninety percent of respondents were interested in Japanese culture before they studied at Japanese language institutes or at Japanese universities. These implied that they had advance knowledge on Japan before they studied in Japan. Correlation analysis implied that Japanese anime or cartoons would be one of indirect causes of Southeast Asian doctoral students' studying at Japanese private universities. Analysis of international students' voices on Japanese private universities' official web pages showed that one reason why they were motivated to study at Japanese private universities was interest in the Japanese language and Japanese culture. This is consistent with the questionnaire survey.

Keywords: doctoral students, international students, Japanese private universities, questionnaire survey, Southeast Asia

1. Introduction

There were seven hundred and ninety-five universities in Japan as of May first, 2020 (Ministry of Education, Culture, Sports, Science and Technology, 2020). They consisted of eighty-six national universities, ninety-four local public universities, and six hundred and fifteen private universities. National universities are established and administered by national university corporations. Local public universities are established and administered by local governments or public university corporations. Private universities are established and administered by incorporated educational institutions or corporations. As of May first, 2020, thirteen percent, two percent, and eighty-five percent of 79,826 foreign undergraduate students received education at national universities, local public universities, and private universities, respectively (Japan Student Services Organization, 2021). Sixty-two percent, four percent, and thirty-four percent of 53,056 foreign graduate students received education at graduate schools of national universities, local public universities, and private universities, respectively. The majority of foreign undergraduate students studied at private universities, while the majority of foreign graduate students studied at national universities. The previous study investigated why doctoral students mainly from Southeast Asia studied engineering or related fields at seven Japanese research-intensive national universities (Futagami, 2021). Seven national universities have high rankings according to the 2020 Academic Ranking of World Universities (ShanghaiRanking Consultancy, 2021). Private universities have lower rankings, compared with seven national universities. World university rankings are important for attracting international students (Furukawa, Shirakawa, & Okuwada, 2013). In this study, I investigated why Southeast Asian engineering or related fields doctorate recipients studied at Japanese private universities, although private universities would have disadvantage in attracting international students.

The Government of Japan selects thirty-seven universities as top global universities (Ministry of Education, Culture, Sports, Science and Technology, 2022). Top global universities are categorized into thirteen top type universities and twenty-four global traction type universities. Thirteen top type universities conduct world-leading education and research. Seven national universities the previous study focused on were top type universities. I am interested in why Southeast Asian students studied at private universities other than top type

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universities. All top type private universities are Waseda University and Keio University. The numbers of foreign engineering doctorate recipients from Waseda University and Keio University were thirty-five and fourteen, respectively, in the fiscal year 2016. The number of foreign engineering doctorate recipients from other private universities was sixty-two in the fiscal year 2016. Foreign engineering doctorate recipients from Waseda University and Keio University occupied forty-four percent of foreign engineering doctorate recipients from the total private universities. If foreign engineering doctorate recipients from Waseda University were included in the research subject, survey results would be affected very much by doctorate recipients from these two top type universities. Then Southeast Asian students studying at Waseda University and Keio University were not included in the research subject.

Southeast Asia is growing economically due to the rise of the manufacturing industry. The Government of Japan supports the Southeast Asia Engineering Education Development Network (SEED-Net) Project through Japan International Cooperation Agency (JICA) (Japan International Cooperation Agency, 2022). One aim of this project is to nurture Southeast Asian human resources in the engineering field by collaboration of Southeast Asian universities with Japanese universities. Because Southeast Asian countries emphasize development of engineering personnel, this study focuses on Southeast Asian engineering doctorate recipients.

Why Southeast Asian undergraduate and graduate students studied at Japanese universities were investigated (Sato, 2012). Sato (2012) surveyed four hundred and fifty-two Indonesian students and three hundred and thirty-two Thai students who studied at Japanese universities and graduate schools in 2001 and 2002. As reasons why Indonesian students studied in Japan, that they got scholarships acquired the highest score. That Japanese economy and technology were developed well, that the research level was high in Japan, and that they were interested in Japanese culture acquired the second, third, and fourth highest scores, respectively. As reasons why Thai students studied in Japan, that they wanted to study in any foreign country acquired the highest score. That Japanese economy and technology were developed well, that they were interested in the Japanese language, and that they were interested in Japanese culture acquired the second, third, and fourth highest scores, respectively.

2. Method

National institute of informatics provides a database on doctoral dissertations published at Japanese universities. Names of foreign recipients who completed doctoral courses and acquired engineering or related fields doctorates at Japanese private universities were obtained from this database. I regarded recipients having foreigner-specific names as foreign recipients. Names of Chinese, Korean, and Taiwanese recipients could be easily distinguished from names of foreign recipients from other countries. I obtained three hundred and two foreign recipients who came from countries other than China, Korea, and Taiwan and acquired engineering or related fields doctorates in fiscal years 2010 to 2019 (from April first 2010 to March thirty-first 2020) at six hundred and thirteen Japanese private universities except Waseda University and Keio University. Doctorates some universities awarded were expressed in Japanese not as engineering doctorates but as compounds of agriculture, art, or biology and engineering (e.g., agricultural engineering). I defined these doctorates as engineering related fields doctorates.

Names of three hundred and two foreign recipients and universities awarding engineering or related fields doctorates were given as two search words, and retrieval was performed by Google search engine. When links to Linked-In or Facebook profile pages or web pages of present affiliated institutions of recipients and so on were displayed, they were referred to. Recipients' present affiliations, academic careers, and so on were often obtained. Sometimes information on countries of origin of recipients was obtained by curricula vitae. Otherwise, I inferred them: In case that recipients' academic careers were obtained from Linked-In or Facebook profile pages, I inferred their countries of origin from locations of universities where they obtained bachelor's degrees, or where they lived at present, although it was not always guaranteed that inference was correct. If possible, acknowledgments in doctoral dissertations were referred to online for inferring countries of origin.

Whether recipients were male or female was distinguishable by their photographs, but some recipients' sexes were unknown because of unavailability of their photographs. Most of questionnaire respondents in the previous study were male (Futagami, 2021). To compare this study with the previous study easily, female recipients were removed in this study, and male recipients and gender unknown recipients were extracted. Such ninety Southeast Asian recipients whose present affiliations were known were selected as the subject of the questionnaire survey. Engineering or related fields doctorates were awarded for ninety Southeast recipients by twenty private universities.

First, ninety Southeast Asian recipients of engineering or related fields doctorates were asked why they studied at Japanese universities. This question was the same as for sixty-six respondents from seven top type universities

(Futagami, 2021). The previous study showed that all three Thai interviewees were interested in Japanese culture and two of three had been to Japan before they studied at the University of Tokyo. Then second, ninety Southeast Asian recipients were asked if they had been to Japan before they studied at Japanese language institutes or Japanese universities. Third, they were asked if they had been interested in Japanese culture before they studied at Japanese language institutes or Japanese universities. Fourth, they were asked what kinds of Japanese culture they had been interested in. Questions are shown in Appendix. Questionnaires were sent by postal mail to ninety Southeast Asian recipients in December 2020 and from March to May 2021, and twenty-nine responded. Engineering or related fields doctorates were awarded for twenty-nine recipients by fifteen private universities. Twenty-nine respondents consisted of eleven Thai, eight Malaysians, seven Vietnamese, two Indonesians, and one Filipino.

3. Creation of Options in Question 1 in the Questionnaire Survey

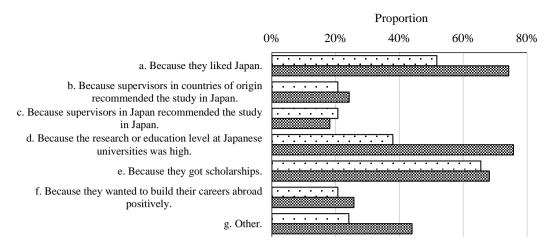
Motivations of international student mobility are often analyzed, based on the push-pull model (Mazzarol & Soutar, 2001; Furukawa et al., 2013; Caruso & de Wit, 2015; Levatino, 2017): Factors promoting international student mobility are divided into push factors in source countries and pull factors in host countries.

Options in Question 1 in Appendix were created referring to Mazzarol and Soutar (2001). Three in six factors to influence student selection of the host country are as follows (Mazzarol & Soutar, 2001): (a) knowledge and awareness of the host country in the home country, (b) personal recommendations from student's parents, relatives, friends, and others, (c) cost issues, including the cost of fees, living expenses, travel costs, and social costs such as safety.

Knowledge and awareness of the host country in the home country include high quality and good reputation of education of the host country. They are relevant to the option (d) in Question 1. As to personal recommendations, recommendations from professors were one of important factors for graduate students to select Canada as the host country (Chen, 2008). They are relevant to the options (b) and (c). As to cost issues, low tuition fees and low costs of living were attractive (Hawthorne, 2010; OECD, 2010; Asian Development Bank Institute, 2014). They are relevant to the option (e). According to the questionnaire survey on 1,001 Japanese who experienced studying abroad, the second most popular reason why Japanese selected host countries was because they liked host countries (Japan Student Services Organization, 2018). It is relevant to the option (a). Nine percent of 2,700 doctorate recipients of engineering or related fields moved within more than three countries including Japan (Futagami, 2021). Because such recipients would have strong positiveness, I selected wanting to build students' careers abroad positively as the option (f), as was similar to the previous study. Finally, I selected "other" as the option(g).

4. Results

The results are shown in Figure 1 for twenty-nine respondents from fifteen private universities and sixty-six respondents from seven top type universities. The horizontal axis represents ratio of the number of respondents who selected each option to the total number of respondents. Six options except the option "g. other" are clearly divided into two groups for sixty-six respondents from seven top type universities. One group consists of the options (a), (d), and (e). This group showed the highest three ratios at which options were selected. The other group consists of the options (b), (c), and (f). This group showed the lowest three ratios at which options were selected. The options (a), (d), and (e) also showed the highest three ratios for twenty-nine respondents from fifteen private universities. The options (b), (c), and (f) also showed the lowest three ratios for twenty-nine respondents. However, difference between options (a), (d), (e) and options (b), (c), (f) was more unclear for twenty-nine respondents from fifteen private universities than for sixty-six respondents from seven top type universities. The option (e) showed the distinctively highest ratio among six options for twenty-nine respondents from fifteen private universities. The second highest option (a) showed a lower ratio than the option (e) by 0.14 points. The third highest option (d) showed a lower ratio than the option (e) by 0.28 points. The difference in ratios of the option (d) between twenty-nine respondents from fifteen private universities and sixty-six respondents from seven top type universities was statistically significant (p<0.001). According to the 2020 Academic Ranking of World Universities (ShanghaiRanking Consultancy, 2021), seven top type universities were ranked first, second, third, fifth, fifth, and ninth among Japanese universities, respectively. The highest ranking in fifteen private universities was eleventh. In view of the above, fifteen private universities would not be as famous as seven top type universities for foreign students. This would be reflected by that twenty-nine respondents from fifteen private universities selected the option (d) at a significantly lower ratio than sixty-six respondents from seven top type universities.



- □ Twenty-nine engineering or related fields doctorate recipients from fifteen private universities.
- Sixty-six engineering or related fields doctorate recipients from seven top type universities (Futagami, 2021).

Figure 1. Why did international students study at Japanese universities?

As the option "other", nine respondents gave comments. Two respondents mentioned that two universities in their countries of origin and Japan had a student and staff exchange program or collaborated. Two respondents mentioned that they received undergraduate or master degrees, and furthered the study for Ph.D. degrees at the same universities. One respondent mentioned that his Ph.D. supervisor was really helpful in research. One respondent mentioned a high reputation professor. One respondent mentioned that the university he studied at was famous in Japan and a recognized institution in the field of research and innovation. One respondent mentioned that the university he studied at was one of the oldest universities in Japan, which meant it had a long history in education. One respondent mentioned that he got a JICA's scholarship and he liked Japan. Many undergraduate students study at Japanese universities through a student exchange program one respondent mentioned.

As seen in Fig.2, forty-eight percent of twenty-nine respondents had been to Japan on trips, short-term study programs, internships, and so on before they studied at Japanese language institutes or at Japanese universities as regular degree-seeking undergraduate or graduate students. Ninety-three percent of twenty-nine respondents were interested in Japanese culture before they studied at Japanese language institutes or at Japanese universities. About a half or more of questionnaire respondents had been to Japan or were interested in Japanese culture, as was consistent with that all three Thai interviewees were interested in Japanese culture such as cartoons and the two interviewees had been to Japan before they studied at the University of Tokyo (Futagami, 2021). This implied that many Southeast Asian students had advance knowledge on Japan before they studied at Japanese universities.

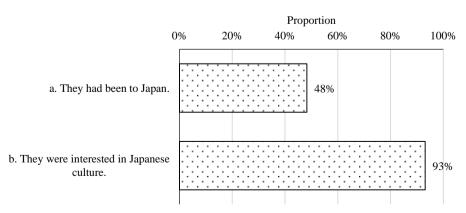


Figure 2. Had international students been to Japan on trips, short-term study programs, internships, and so on or were they interested in Japanese culture before they studied at Japanese language institutes or at Japanese universities as regular degree-seeking undergraduate or graduate students? (n=29)

What kinds of Japanese culture questionnaire respondents were interested in was shown in Figure 3. Questionnaire respondents who selected anime or cartoons, television programs or movies, literature, and music occupy fifty-two percent, fifty-nine percent, fifteen percent, and thirty-seven percent, respectively.

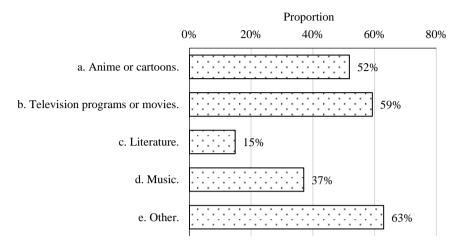


Figure 3. What kinds of Japanese culture were international students interested in? (n=27)

As the option "other", seventeen respondents gave comments. Eight respondents mentioned Japanese working style, lifestyle, tradition, manner, discipline, punctuality, honesty, or the spirit or good characters of Japanese people. Three respondents mentioned engineering, technology, or innovation. Two respondents mentioned eating or food. One respondent mentioned manufacturing or craftsmanship. One respondent mentioned artwork and social life. One respondent mentioned the Japanese football team. One respondent mentioned water color painting, Japanese-style gardens, and Zen. One respondent mentioned history and Look East Policy relation between Malaysia and Japan. One respondent mentioned that he was influenced by his elder brother who studied at Japan and was interested in automobiles. The total (nineteen) of above numerals was larger than the number (seventeen) of respondents who gave comments. This was because two respondents were counted twice. Respondents were interested in a variety of culture, as seen above.

5. Statistical Analysis

Pearson's correlation coefficients between seven options ((a)-(b) in Figure 2, (a)-(e) in Figure 3) and the option (a) "because they liked Japan" in Figure 1 were calculated. Only the option (a) "Anime or cartoons" in Figure 3 correlated significantly (p<0.05) and positively with the option (a) "because they liked Japan" in Figure 1. As that questionnaire respondents liked Japan was the second most popular as why they studied at Japanese private universities, this correlation would imply that Japanese anime or cartoons would be one of indirect causes of studying at Japanese private universities.

6. Analysis of International Students' Voices on Universities' Official Web Pages

There were six hundred and twenty private universities in Japan as of April first, 2021. International students' voices were collected up from official web pages of six hundred and twenty private universities between September and November 2021. On official web pages of each private university, retrieval was performed with Japanese expressions of international students and voices as two search words. Retrieved pages were inspected. Official web pages on international exchange and international students were also inspected for each private university. When foreign students' or graduates' voices were included in Japanese students' or graduates' voices on official web pages, they were inspected, too. International students' voices were given and referred to mainly as text data, but sometimes as audio data in video messages. Why and how international students studied in Japan or at each university was picked up from inspected web pages. How they were interested in Japan or each university was also picked up. Comments by one hundred and ninety-seven students were picked up. One hundred and ninety-seven foreign students consisted of forty-seven graduate students (24%), one hundred and twenty-five regular undergraduate students or students dispatched on exchange programs (63%), and twenty-five other students (13%). Whether twenty-five other students were graduate students, undergraduate students, or dispatched students was unknown. Two doctoral students were included in forty-seven foreign graduate students. Proportions of male international students, female international students, and gender unknown international

students were 44%, 52%, and 4%, respectively. Proportion of international students majoring in the humanities, social science, and so on was 68%, while proportion of international students majoring in engineering, science, pharmacy, health sciences, and so on was 25%. Proportion of international students whose majors were unknown was 7%. Proportion of international students from Southeast Asia was 30%. Proportion of international students from North America, Europe, Oceania, and Russia was 14%. Proportion of international students from other regions was 54%. Proportion of international students whose countries of origin were unknown was 2%.

Thirteen reasons why international students studied in Japan or at Japanese private universities were extracted from one hundred and ninety-seven comments. The maximum number of reasons extracted from one comment was six. Each reason corresponded to more than five comments. Proportions of thirteen reasons are shown in Figure 4. The most popular reason was because international students were interested in the Japanese language and Japanese culture including cartoons, music, games, literature, television programs, movies, or history or they wanted to learn the Japanese language and Japanese culture more in Japan. The second most popular reason was because the study in Japan was recommended by families, relatives, friends, seniors, professors, Japanese teachers, and so on. The third most popular reason was because international students had before been to Japan for study, travel, work, and so on, or had before lived in Japan. The fourth most popular reason was because Japan had advanced technology. The fifth most popular reason was because Japanese universities international students studied at were attractive from the viewpoint of excellent and serious professors, well-equipped facilities, clean campuses, convenience, and so on. The sixth most popular reason was because the environments were good, nature was beautiful, or transportation systems were excellent. The seventh most popular reason was because international students wanted to study in Japan or at Japanese universities for their visions or jobs. The eighth most popular reason was because international students acquired scholarships or costs of studying in Japan were cheap. The ninth most popular reason was because universities international students enrolled at in their countries of origin cooperated with Japanese universities they studied at. The tenth most popular reason was because Japanese people were kind or well-disciplined. The eleventh most popular reason was because international students were influenced by Japanese friends, principals of Japanese language institutes, or colleagues working together with them when they were in countries of origin. The twelfth most popular reason was because the level of Japanese education was high. The thirteenth reason "other" was assigned to comments which none of the above twelve reasons were assigned to.

Proportion of the most popular reason "because international students were interested in the Japanese language and Japanese culture" was 57.4%. The questionnaire survey and the analysis of international students' voices implied that interest in Japanese culture was a motivation for foreign students to study in Japan. Attributes of students in the analysis of international students' voices had more various values than those of doctorate recipients in the questionnaire survey: The former students consisted of undergraduate and graduate students, consisted of males and females, came from various countries including Southeast Asia, and majored in various disciplines including engineering. In spite of this difference, both the questionnaire survey and the analysis of international students' voices showed that interest in Japanese culture was an important factor in motivating foreign students to study at Japanese private universities.

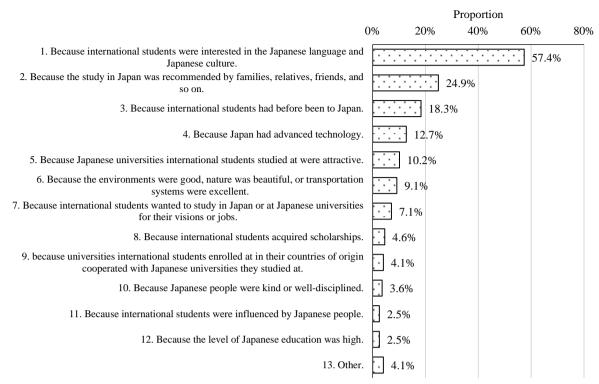


Figure 4. Why did international students study in Japan or at Japanese private universities? (n=197)

7. Discussion

From Fig.1, the most popular reason why engineering or related fields doctorate recipients studied at Japanese private universities was a scholarship. From Fig. 4, The most popular reason why foreign students study in Japan or at Japanese private universities was interest in the Japanese language and Japanese culture. Some students giving students' voices in the previous section were dispatched on student exchange programs. They would stay in Japan for a short period, while doctoral students would stay for a long period. Then scholarships may be more important for doctoral students.

According to Sato (2012), scholarships gave the sixth highest score as reasons why Thai students studied at Japanese universities and graduate schools (Sato, 2012). This study showed that scholarships were the most popular reason why Southeast Asian engineering or related fields doctorate recipients studied at Japanese private universities. So, the study by Sato (2012) disagrees partly with this study. This may be due to difference in research subjects and survey periods between two surveys.

8. Conclusion

The questionnaire survey showed that most of Southeast Asian recipients of engineering or related fields were interested in Japanese culture. In particular, correlation analysis showed that interest in Japanese anime or cartoons correlated significantly and positively with that they liked Japan. Analysis of international students' voices showed interest in Japanese culture was a main incentive for international students' studying at Japanese private universities. This study emphasizes that exchange of culture between nations is important for attracting excellent Southeast Asian doctoral students to Japanese private universities, in addition to scholarships and excellent research or education circumstances, which is similar to results on Southeast Asian doctoral recipients or students studying at seven top type universities.

The sample in the questionnaire survey consisted of doctorate recipients judged as males and gender unknown doctorate recipients, and did not include doctorate recipients judged explicitly as females, as response rate from females would be lower. Because of this, this study has a limitation: The questionnaire survey sample may not represent the whole Southeast Asian engineering or related fields doctorate recipients accurately.

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Appendix

Question 1: Why did you study at a Japanese university? Please select the appropriate alphabet (Multiple answers allowed).

- a. Because you liked Japan.
- b. Because your supervisor in your country of origin recommended the study at a Japanese university.
- c. Because your supervisor in Japan recommended the study at a Japanese university.
- d. Because the research or education level at a Japanese university where you studied was high.

- e. Because you got a scholarship.
- f. Because you wanted to build your career abroad positively.
- g. Other.

Question 2: Have you been to Japan on a trip, a short-term study program, an internship, and so on before you studied at a Japanese language institute or at a Japanese university as a regular degree-seeking undergraduate or graduate student?

- a. Yes, you have been to Japan.
- b. No, you have not been to Japan.

Question 3: Were you interested in Japanese culture before you studied at a Japanese language institute or at a Japanese university as a regular degree-seeking undergraduate or graduate student?

- a. Yes, you were.
- b. No, you weren't.

Question 4: If you chose the answer (a) in the above question (3), could you please tell me what kinds of Japanese culture you were interested in, if possible? (Multiple answers allowed)

- a. Anime or cartoons.
- Television programs or movies.
- c. Literature.
- d. Music.
- e. Other.

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